

STATE OF CALIFORNIA
STATE AND CONSUMER SERVICES AGENCY
CALIFORNIA BUILDING STANDARDS COMMISSION
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Office Use Item No. _____

PARTICIPATION COMMENTS FOR THE NOTICE DATED OCTOBER 2, 2009
Written comments are to be sent to the above address.

WRITTEN COMMENT DEADLINE: NOVEMBER 16, 2009

Date: November 13, 2009

From:

Rick Thornberry, PE

Name (Print or type)

(Signature)

The Code Consortium, Inc. on behalf of the California Fire Safety Advisory Council (CFSAC)

Agency, jurisdiction, chapter, company, association, individual, etc.

2724 Elks Way

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I/We ~~do~~(do not) agree with:

[] The Agency proposed modifications As Submitted on Section No. Table R302.6 Footnote 1 of
Part 2.5

and request that this section or reference provision be recommended:

[] Approved [] Disapproved [] Held for Further Study [] Approved as Amended

BEGINS ON PAGE 2

Suggested Revisions to the Text of the Regulations:

**TABLE R302.6
DWELLING/GARAGE SEPARATION**

SEPARATION	MATERIAL
From the residence and attics	Not less than ½-inch gypsum board or equivalent applied to the garage side
From all habitable rooms above the garage or carport	Not less than ⅝-inch Type X gypsum board or equivalent ⁴
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than ½-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than ½-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

~~1. Not less than ½-inch gypsum board or equivalent shall be permitted where the dwelling and the private garage or carport is protected by fire sprinklers.~~

Reason: [The reason should be concise if the request is for “Disapproval,” “Further Study,” or “Approve As Amend” and identify at least one of the 9-point criteria (following) of Health and Safety Code §18930.]

This proposed amendment to Table R302.6 Footnote 1 of Part 2.5 as proposed by the California State Fire Marshal for the adoption of the 2009 ICC International Building Code is based on Item 3 of the nine point criteria in Health and Safety Code Section 18930 which reads: “The public interest requires the adoption of the building standards.”

There is nothing indicated in the Initial Statement of Reasons (ISOR) for the addition of Footnote 1 to Table R302.6 Dwelling/Garage Separation. This footnote reduces the required level of fire-resistive separation between a garage or carport and the habitable rooms located above from ⅝-inch thick Type X gypsum wallboard or equivalent to ½-inch regular gypsum wallboard or equivalent where both the dwelling and the garage or carport are protected by automatic residential fire sprinklers.

In our opinion, this sprinkler trade-off is neither justified nor cost effective. This is a significant reduction in the level of fire-resistive protection provided to the dwelling unit from a potential fire originating in the garage or carport without any significant reduction in cost that can justify such a trade-off. It is our understanding that the price difference between ½-inch regular gypsum wallboard and ⅝-inch Type X gypsum wallboard is about a 20% premium for 4 ft x 8 ft boards.

Standard 1/2-inch regular gypsum wallboard 4 ft x 8 ft boards cost anywhere from \$4 to \$10 each, resulting in an increased price differential of approximately 80¢ to \$2 more per board for 5/8-inch Type X gypsum wallboard. Given a typical two-car garage of approximately 16 ft x 20 ft, this would result in the required installation of ten 4 ft x 8 ft boards. Thus, the total cost of materials to provide the level of protection currently prescribed in the 2009 International Residential Code would be approximately \$8 to \$20.

It should be noted that there is a significant difference in fire performance between 1/2-inch regular gypsum wallboard and 5/8-inch Type X gypsum wallboard. For example, in Table 721.6.2(1) of the 2009 International Building Code for calculated wood fire-resistance rated assemblies, 1/2-inch regular gypsum wallboard is assigned a rating of 15 minutes as compared to a rating of 40 minutes for 5/8-inch Type X gypsum wallboard. Furthermore, the finish rating for 1/2-inch regular gypsum wallboard is approximately 15 minutes as compared to finish ratings of anywhere from 20 to 26 minutes for 5/8-inch Type X gypsum wallboard. This is based on an evaluation of UL Design Nos. U305, U309, U314, and U317 for fire-resistance rated gypsum wallboard/wood stud wall assemblies. The finish rating is the time at which the temperature on the face of the wood stud over which the gypsum wallboard is installed on the fire exposed side of the wall assembly reaches an increase of 250°F above the temperature at the start of the fire test. This is used as an indication of the ability of the gypsum wallboard to prevent the ignition of wood framing members.

Given the fact that the minimum water supply for the automatic residential fire sprinkler system in accordance with Section R313.3.5.2 Required Capacity ranges from 7 to 10 minutes, it seems prudent to utilize the 5/8-inch Type X gypsum wallboard to provide an additional factor of safety in case the sprinkler system doesn't perform or is not able to keep the fire under control. This will provide additional time for the occupants to escape and for the fire department to arrive and initiate manual fire fighting efforts. The 5/8-inch Type X gypsum wallboard will afford a minimum 5 to 10 minutes additional protection as compared to the 1/2-inch regular gypsum wallboard. Furthermore, under fire exposure conditions the 1/2-inch regular gypsum wallboard has less structural integrity. In a horizontal position, it will fall off the ceiling joists much earlier than would be the case for 5/8-inch Type X gypsum wallboard which is designed with additional fiber reinforcement to maintain its integrity for a greater period of time under fire exposure than regular gypsum wallboard.

It should also be noted that no such trade-off was proposed to the 2009 International Residential Code for the current ICC code development cycle. In fact, Code Change RB184-09/10 submitted by the Joint Fire Service Review Committee only proposed trade-offs to Table R302.1 similar to the proposed trade-offs being recommended for adoption by the State Fire Marshal amendments. They did not include any reductions in protection to Table R302.6. It is interesting to note that the International Residential Building/Energy Code Committee recommended disapproval of that code change. However, a floor action for approval as submitted was successful on a vote of 539 to 139.

In conclusion, the trade-off reducing the required 5/8-inch Type X gypsum wallboard ceiling protection above garages and carports located below occupied spaces in dwelling units to 1/2-inch regular gypsum wallboard provides very little economic benefit, but would allow a potentially significantly greater fire hazard to the occupants of the dwelling unit. This trade-off has not been substantiated in the ISOR.